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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/824,119	04/02/2001	Craig W. Hodgson	LITTONP.002C1	9187

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EXAMINER

CHANG, AUDREY Y

ART UNIT PAPER NUMBER

2872

DATE MAILED: 06/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/824,119

Applicant(s)

HODGSON ET AL.

Examiner

Audrey Y. Chang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1 and 3-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Remark

- This Office Action is in response to applicant's amendment filed on April 7, 2003, which has been entered as paper number 16.
- By this amendment, the applicant has amended claims 1, 4, 21 and 22,
- Claims 1 and 3-30 remain pending in this application.
- The rejections to claims 1, and 3-30 under 35 USC 112, second paragraph, concerning the phrases in determining the coupling ratios for both input and out couplers, as set forth in the previous Office Action dated January 22, 2003 **still hold**.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. **Claims 1 and 3-30 are rejected under 35 U.S.C. 112, first paragraph**, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification fails to give a clear and full description for determining the coupling ratios of the input couplers and output couplers based on the "first number of input (or output) coupler", the "second number of input (or output) coupler", the "first input coupler", the "second input coupler", the "first output coupler" and the "second output coupler" as recited in claims 1, 4, 21 and 22. The applicant

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is respectfully noted that specification only gives support for **assigning** certain coupling ratio values for the input couplers that connect different sensors, (as shown in page 6, lines 16-24), and for **selecting** certain coupling ratio values for the output couplers (as shown in page 5 line 27 to page 6 line 9). No **scheme** of determination based on numbers of couplers, the first and second coupler as set forth in the claims ever been given in the specification.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. **Claims 1 and 3-30 are rejected under 35 U.S.C. 112, second paragraph**, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As stated in the previous Office Action dated January 22, 2003, the phrases concerning the determination of the coupling ratios for the input coupler and output coupler are confusing and indefinite. It is not clear what are these “first input coupler” and “second input coupler” or “first output coupler” and “second output coupler”. Also it is not clear how are these “first number of couplers” and “second number of couplers” determined or how do they relate to each other. It is not clear if these couplers are in the same sensor group or not. It is not clear if these couplers are on the same distribution line or on the same return line or not. The language is so vague and confusing it is not possible to determine the scopes of the claims.

The phrase “a first number of said output couplers are located between said first output coupler and a signal destination on one of said n return fiber line” recited in claim 1 is confusing and indefinite since it is not clear how could the couplers be located between a coupler and a signal? If the return fiber line is referred here, then positive description should be given.

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The applicant is respectfully requested to clarify the claim languages to make the claims clear and definite. At this juncture, the claim languages are very confusing and the specification fail to give proper description for such features which make the scopes of the claims unclear.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 1, 3-10, 13-20, 21, 22, and 23-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Giallorenzi (PN. 4,648,083).**

Giallorenzi teaches a conformer *sensor array* using fiber optic transmission wherein the array comprises a plurality of *fiber input lines* (42) serves as the *distribution fiber lines*, connecting to a plurality of *light sources*, a plurality of *fiber optic output lines* (50) serves as the *return fiber lines*, and a plurality of *sensor groups* (39), each comprises a plurality of *sensors* (38), *input couplers* (46) and *output couplers* (52) for connecting the sensors to the distribution fiber lines and return fiber lines, (please see Figure 3 and columns 3 and 4). **Giallorenzi** teaches that each of the sensors within a sensor group is connected to a different fiber input lines or distribution fiber lines and the sensors within a sensor group are connected to the same fiber optic output line, (please see Figure 3).

This reference has met all the limitations of the claims with the *exception* that it does not teach explicitly that the number of input fiber lines is 6 and the number of output fiber lines is 16, however such numbers may either be implicitly *implied* by the plurality or N number lines disclosed in the reference or an obvious modification to one skilled in the art for the benefit of providing a sensor array with the

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desired number of transmission fiber lines. Although this reference does not teach explicitly that the coupling ratios for the input couplers and output couplers are determined to reduce the difference in the retuned optical signal power levels, however by varying the coupling ratio of an optical coupler to adjust the power levels of fiber lines connected by the optical coupler is standard knowledge in the art. Such modification would have been obvious to one skilled in the art to improve the power distribution and power return in the sensor array arrangement. The details concerning the scheme of determining the coupling ratios cannot be examined here since the specification and the claims fail to give a clear and definite description for that.

Response to Arguments

7. Applicant's arguments filed on April 7, 2003 have been fully considered but they are not persuasive. Applicant's arguments have been fully considered and addressed in the paragraphs above.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Audrey Y. Chang whose telephone number is 703-305-6208. The examiner can normally be reached on Monday-Friday (8:00-4:30), alternative Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cassandra Spyrou can be reached on 703-308-1637. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

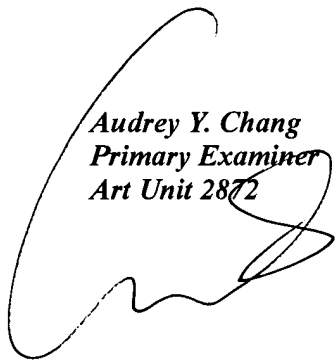
Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

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Audrey Y. Chang
Primary Examiner
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A large, stylized handwritten signature in black ink, which appears to be 'Audrey Y. Chang', is written over the typed name and title.

A. Chang, Ph.D.
June 3, 2003